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PEAR Culture

by E.G. Fisher
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Contents

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PEAR CULTURE

E. G. Fisher and R. C. Lamb

The major problem limiting pear production in New York during the past 30 years has been fire blight disease. Most pear orchards have been maintained in low vigor since this practice reduces the severity of the disease. Low vigor, however, produced low yields, and profits inevitably declined. Until recently, few new pear orchards were planted, and pear production in New York showed a steady downward trend from 1935 until the mid-forties.

Following the middle of the last decade, production decreased to such an extent that it did not meet demand and prices generally became favorable. As a result, some neglected orchards have recently been cared for and a few new ones planted. If pear prices remain satisfactory, pear plantings can again increase.

A consistant annual production of high quality pears is necessary to establish dependable markets. New York pears are generally of excellent quality. Maintenance of high annual yields and control of fire blight damage are the major production problems.

Location of the Orchard

Climate

Pear buds and wood are not as hardy to winter cold as many New York apple varieties. The lowest temperatures recorded throughout New York are illustrated in figure 1. Ideally, commercial pear production should be limited to those areas where the lowest temperature recorded is $-20°$ F, or at the most $-30°$ F.

Pear trees blossom before apples or at about the same time as sour cherries. Although pear blossoms may be more resistant to cold than peach and sweet cherry, commercial orchards should not be planted where spring frost is likely to be a problem. Average dates of the last killing frost in New York State are shown in figure 2. Pear trees should not be planted commercially where this date is later than May 10.

The general areas in New York where both the lowest temperature recorded and the average date of the last killing frost favor commercial plantings of pears are shown in figure 3. Four areas are indicated: along Lake Ontario; on the higher areas surrounding the Hudson Valley south of the city of Hudson; several smaller areas surrounding the Finger Lakes region of central New York; and the Long Island area.

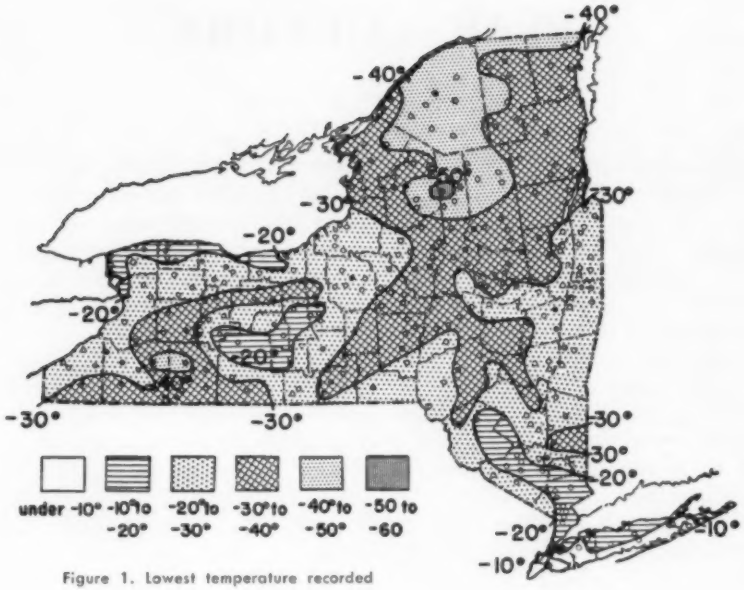

Figure 1. Lowest temperature recorded

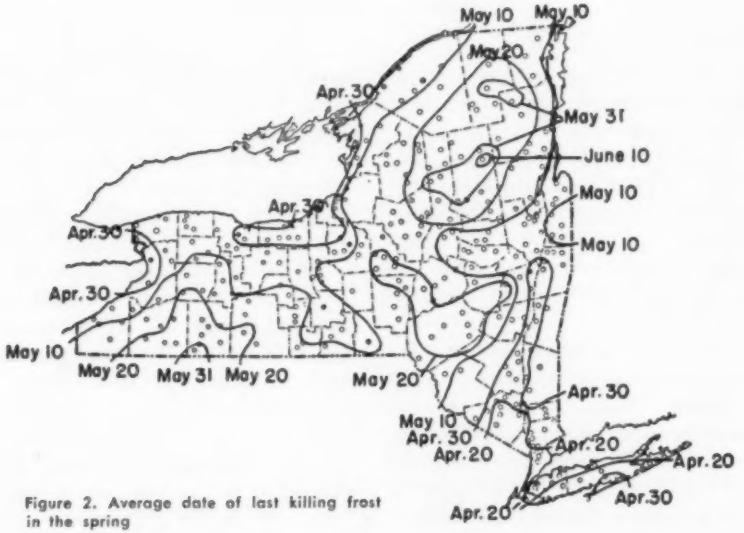

Figure 2. Average date of last killing frost in the spring

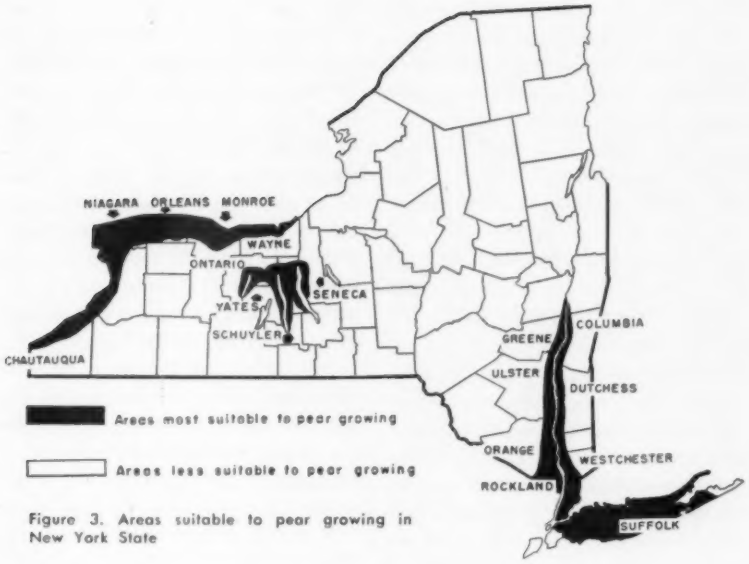

Figure 3. Areas suitable to pear growing in New York State

Air Drainage

Good air drainage is important in selecting a site for pears, because it reduces the danger of spring frost, and may help in the control of fire blight. Also leaf scorch is more severe in sheltered areas where heat may be trapped during hot summer months. The drainage of air should not be blocked by high hedgerows, wood lots, windbreaks or surrounding higher land. Elevated locations are usually best, except in areas where there is almost no danger of late spring frosts. Although sheltered areas with less wind favor bee activity and improve pollination, most other conditions support the practice of removing windbreaks which impede the free movement of air.

Soils

Pear trees will survive on moderately drained soils. Only deep, well-drained, loam-textured soils can produce the best yields at the least expense, however. Also, poor drainage appears to increase the severity of fire blight damage. In areas where the depth of water drainage is inadequate, planting on mounds, ditching, and tile drainage are desirable.

The Tree

Standard-size pear trees are normally propagated on seedlings of *Pyrus communis*. Ordinarily, these are Bartlett seedlings, since seed is usually obtained from canning factories. These stocks are quite satisfactory.

They are compatible with all varieties as far as is known, and they produce productive, hardy trees. However, they are susceptible to fire blight. Not infrequently, suckers become infected with blight which spreads into the roots and kills the tree. Seedlings of various blight-resistant Oriental species of pear have been tried, but they increase the occurrence of black end (a physiological disorder of the fruit), and they are not now used.

Dwarf pears are propagated on quince root stock. Pear trees on quince stock are much smaller, bear at a younger age, and their fruit may be larger and of better quality. Quince, however, is incompatible with many pear varieties. The graft forms such a weak union that it is easily broken off. Bartlett, Bosc, and Clapp's Favorite varieties are so incompatible with quince that they should be double-worked with Old Home or Hardy to obtain a satisfactory tree. This is done by budding Old Home or Hardy to the quince stock, and then budding the desired variety to the intermediate variety the following year.

Quince stock has other disadvantages. It is extremely susceptible to fire blight, and it is more susceptible to injury by low temperatures than seedling pear root stocks. Furthermore, quince roots are more particular as to soils and drainage than seedling pear roots. For this reason, dwarf pears are not recommended for use in commercial orchards, but they may have a place in small plantings, in a favorable location.

Susceptible varieties propagated in the normal way may sometimes be killed when the main trunk is invaded and girdled by blight-causing cankers. Trees with a blight-resistant framework can be planted to avoid this condition. First the Old Home variety is set in the orchard. This is trained to scaffold limbs and leaders as for a normal tree. After two or three years, the desired variety can be grafted or budded on to the Old Home tree. The grafts are put in the scaffold limbs a foot or more from the trunk, so that if the susceptible scion variety does blight, the framework of the tree will not be killed.

Vigorous one-year-old whips are more satisfactory for planting than older trees. One-year-old trees suffer less shock on transplanting and are less likely to die.

Time of Planting

Fall planted trees (November or early December) will generally produce moderate to vigorous top growth the first growing season. Early spring planting may also be satisfactory, but late spring planting should be avoided. Roots should never be exposed to freezing weather during transfer from the nursery to the orchard, or while planting in the orchard.

Planting Distances

Orchard spacing greatly affects yield per acre. Some of the more vig-

orous varieties such as Bosc might profit from a spacing as wide as 25 feet, but a spacing of 20′ x 20′ is usually satisfactory for an orchard that is mainly Bartlett.

With the newer methods of spraying, there is some advantage to having the distance between trees in the row closer than the distance between the rows. For this reason, a planting distance of 18′ x 24′ might be desirable. If the lay of the land permits spraying in any direction, the trees could be planted at 12′ x 18′. After 10 or 12 years, every other tree at the closer spacing should be removed, leaving a spacing of 18′ x 24′.

Dwarf pears may be planted 10′ x 20′.

Pollination

Pear trees require cross-pollination by insects. If sunshine is abundant, the Bartlett variety may set fruit with its own pollen, but this cannot be depended upon under New York conditions. Since pear trees blossom early when temperatures are usually cool and bees are apt to fly only short distances, a plentiful supply of pollenizer trees should be available. It is not wise to depend upon only one variety for pollination. Two, or at most, three rows of the main variety (usually Bartlett) followed by one row of pollinating varieties is a suggested plan. The pollinating row can be set alternately with two varieties, for instance, Bosc and Gorham, or

Figure 4. These trees were originally spaced 16 x 16. Every other tree was removed, leaving the trees 16 x 32. A spacing of 32 feet between rows is wider than necessary.

Bosc and Clapp's Favorite. The main disadvantage of Clapp's Favorite is its susceptibility to fire blight. Most pear varieties overlap enough in their period of blossom to take care of cross-pollination.

Except for Alexander Lucas and Waite, most pear varieties produce good pollen. Of the varieties producing good pollen, nearly all are cross-compatible, that is, they will pollinate each other. Bartlett and Seckel are one exception. They will not pollinate each other.

There should be at least one hive of bees per acre at blossom time. The hives can be grouped together in a sheltered area under the trees in the center of the orchard. If barriers such as windbreaks or elevation differences divide the orchard, a separate group of bees should be placed at each location. Because of the low sugar concentration in the nectar, bees are not strongly attracted to pear blossoms. Eliminating early flowering plants such as dandelion from the orchard and nearby fields and waiting to place the bees in the orchard until the trees are in bloom and ready for pollination increase the chances that the bees will be attracted to pear blossoms. Another way to encourage pear visitation is to feed the bees pear honey or a sugar solution in which pear blossoms have been soaked. The sugar solution can be prepared by dissolving one part of sugar in one part of water. Add enough fully developed pear blossoms to form a thick slurry. Allow the slurry to soak for three or four hours and strain. The solution can then be fed in the usual manner.

Cultivation and Fertilization

Methods of Soil Management

Cultural and fertilization practices should be selected which produce 6 to 12 inches of terminal growth on mature Bartlett trees. Fruit production will tend to be biennial if growth is considerably less than 6 inches. Fire blight may increase if growth averages considerably more than 12 inches.

Both cultivation and sod or sod-mulch methods of management are used in New York pear orchards. A recent report by the Michigan Agricultural Experiment Station [1] indicates that over a long-time period, a sod-mulch system of management is superior to cultivation and cover crop management. In their studies, the cultivation and cover crop method led in yields for a twelve year period. From then on, however, the pear trees under sod-mulch produced heavier crops and larger fruit. Twenty seven years after the orchard had been placed into sod, the sod-mulch

[1] W. Toenjes, *Michigan Agricultural Experiment Station Quarterly Bulletin*, Vol. XXXVII, No. 3, Michigan State College, East Lansing, February, 1955, pp. 363–374.

treatment had produced an accumulated yield of 1,136 more bushels of fruit per acre than the cultivation-cover crop treatment and 80 percent more of the fruit graded above 2¼ inches in size during the six years that the fruit was size-graded. A temporary setback might be expected, then, by placing a pear orchard into sod, but because of the long-term effects, the sod or sod-mulch system is suggested for New York orchards. The trees in this experiment were placed in alfalfa sod. The report suggests that the setback period might be shorter if bluegrass were planted in place of alfalfa. Data published by Hildebrand and Heinicke [2], however, indicates that there may be less fire blight severity with trees growing in alfalfa than in grass sod. If a severe setback might be expected from sod-management, a grass seeding might be used. This would be true with trees up to five years of age, or with trees growing on only moderately well-drained soil. Alfalfa might well be used when an older orchard is placed into sod, but only if the sod is deeply drained but not excessively droughty.

Sod Management

Most sod orchards in New York need nitrogen fertilization. A good sod management program provides for an adequate supply of soil moisture, soil aeration, and all required plant nutrients. Grass and weeds compete with the trees for nutrients and water during the spring and summer. This competition can be reduced by (1) frequent mowing, (2) mulching, and (3) contact weed spraying.

Frequent mowing during the period of fruit development helps to improve fruit size. Sod growth should be maintained at a 3 to 6 inch height. Vigorous sod may require mowing at about 10-day intervals in the spring and early summer.

The root system of the pear tree is located, for the most part, under the spread of the branches. Special attention should be given this area. Mulching is a very effective treatment with pears and is suggested when an inexpensive source of mulch material is available. An excessively heavy application of high nitrogen mulch, however, can cause too much growth and increase fire blight severity. In a recent study of 14-year-old Bartlett pear trees, a marked increase in fruit size resulted from an application of one bale of straw mulch per tree per year.

Alfalfa Sod Management

Alfalfa sod should be used only on deep, well-drained loam soils. The sod should be mowed 3 or 4 times during the season and the mowings raked under the trees. If mowings are allowed to remain on the sod, grass will be stimulated rather than the alfalfa, and may soon replace the

[2] E. M. Hildebrand and A. J. Heinicke, *Incidence of Fire Blight in Young Apple Trees in Relation to Orchard Practices,* New York State Agricultural Experiment Station Memoir 203 (1937) pp. 1–36.

alfalfa. The mulch rakings themselves should supply sufficient nitrogen to the trees. If not, a light soil application can be made on the mulch under the trees in early spring, or several urea foliage sprays can be applied in June. The alfalfa sod must be well supplied with both lime and phosphorus. Nitrogen should not be applied directly to alfalfa sod. Both the trees and the alfalfa may require DDT sprays to control buffalo tree hoppers. The sprays are applied in May, June and July, but their exact timing should be obtained from your local extension service.

Grass Sod Management

Alfalfa may not produce a good stand on more poorly drained soils, or if it does, the pear trees may not withstand the competition. Under these conditions, grass sod may be used. A seeding mixture of 4 pounds of timothy, 4 pounds of red clover, 6 pounds of Kentucky bluegrass and 1 pound of alsike or ladino clover per acre is suggested. If grass sod is used, mulching will help prevent excessive grass growth under the trees. Dalapon weed sprays may be used on a trial basis. The grass should be mowed 4 or more times during the season. The clippings may be raked under the tree, and/or supplemental mulching material can be supplied. Mulch provides much of the nitrogen required by the trees. In addition, nitrogenous fertilizer can be spread under the trees in the early spring as a soil application, or urea foliage spray can be applied in June.

Fertilization

Alfalfa sod should receive enough lime to maintain a pH of about 6.5. If the pH approaches 7.0, the trees may show minor element difficiencies. Grass sod should receive lime applications to maintain a pH of 6.0 or better. Occasional applications of potash and phosphorus may improve grass, tree and fruit growth. Soil or leaf analysis will help to establish the need for these fertilizer materials.

Most orchards require nitrogen fertilization. Suggested rates of soil applications to the tree are shown in table 1.

Nitrogen fertilizer can be applied in late fall or early spring. Generally, fall applications should not be made until the latter part of November. Spring applications should be made at the time of, or shortly before, bud break. Avoid late spring or summer applications of nitrogen to the soil.

Urea Sprays

Urea sprays are suggested only as a nitrogen supplement. Additional nitrogen should be applied to the soil either with mulch or inorganic fertilizer. Urea sprays can be used as follows. Provide about half the nitrogen required as a soil application. If blossom blight is not a problem, supplement with the desired number of urea sprays. If blossom blight is a problem, omit the sprays.

Urea may be applied in a dilute spray at 5 pounds per hundred gallons or in concentrate sprays at 3 pounds per hundred gallons. It is

Table 1. Nitrogen fertilization of pear trees

Age	Ammonium nitrate	10–10–10	
	Sod	Sod	Cultivation
	(pounds per tree)	(pounds per tree)	(pounds per tree)
1–2	——*	½ – 1	0 – ½*
3–5	——*	1½ – 2½	½ – 1½*
5–10	½ – 1	2 – 3	——†
10–15	1 – 1½	3 – 5	——†
over 15	1½ – 2½	4 – 8	——†

* All young trees, whether in sod or cultivation, should receive a complete fertilizer.
† Trees over 5 years of age should be in sod or sod-mulch.

compatible with most materials except those containing lead, mercury, DN, and copper. Sprays should be applied no oftener than once a week. If possible, a urea formulation should contain little or no biuret.

Pruning

The Young Tree

An unbranched one-year whip should be headed back to 3 to 3½ feet before the first season's growth. If the tree is a branched two-year old, the scaffold limbs and central leader should be selected and the remaining branches removed. A long leader should be headed back, leaving no more than 18 to 24 inches of the previous season's growth. Pruning for the first few years has one main purpose; to select about five or six scaffold limbs spaced 4 to 12 inches apart and distributed uniformly around the tree. Occasional corrective cuts may be necessary to balance the growth of scaffold limbs or to remove a continuous growing leader. Some pruning may be necessary as the tree reaches four or five years of age to keep it from growing too tall. To maintain the mature trees at a maximum height of 15 to 18 feet, a light heading back and thinning out of the higher limbs, particularly in the center of the tree should be done at this time. By such a practice, it should not be necessary to make large cuts on the older tree which can increase susceptibility to blight.

Most pear varieties have an upright habit of growth and as young trees, the branches may appear to be quite dense. When the tree starts to produce, the weight of the fruit pulls the branches down and gives the tree a more open-spreading form.

The Mature Tree

Once a height of 15 to 18 feet has been reached, annual heading back of the higher limbs will keep the bearing area low. A light thinning out of branches will allow better spray penetration and help to improve fruit size and quality.

If the trees are planted close together in the row, or the hedgerow system is used, some heading back of side branches may be necessary to prevent interlocking and shading of branches.

Pruning in Relation to Fire Blight

Heavy pruning, either removing too much small wood or making large cuts, can cause the tree to grow too rapidly and increase its susceptibility to blight.

Some pruning procedures can aid in blight control. Infected terminals should be removed in the dormant pruning schedule. Generally, such terminals hold their dead leaves until late in the winter and can be readily located. Cankers on large limbs should be cut out, or the entire limb removed 8 to 12 inches below the section of diseased tissue. If this pruning is done before March 15, there is little danger of spreading the blight by pruning.

Summer pruning of infected twigs and branches sometimes saves trees or large branches. This should be done with care because of the danger of further spreading the blight. Cuts should be made 12 inches below the apparent edge of the infected tissue.

Figure 5. An example of an undesirable tree shape: too many limbs crowding at one point.

Before making each cut, all pruning tools should be sterilized with a mixture of 1 part of corrosive sublimate and 1 part of cyanide of mercury in 500 parts of water. Where there appears to be canker development, the area should be painted with canker paint before pruning.[3]

The lower part of scaffold limbs should be kept clean of "water suckers" and blossom spurs to help prevent blight infection of large diameter wood. This can be done both during the dormant pruning schedule and in early spring when "water sprouts" are removed.

[3] Control of blight is discussed in detail in Cornell Extension Bulletin 966, *Fire Blight of Pome Fruits and Its Control*, by K. G. Parker, E. G. Fisher and W. D. Mills, 1956.

Figure 6. An example of an undesirable tree shape: not enough limbs in the mid-area of the leader. This could have been avoided by pruning back the leader to 18 to 24 inches when the tree was younger (see text). Also, the two "balanced" limbs at the top of the tree make a weak crotch.

Figure 7. An example of a more desirable tree shape. The limb spacing is adequate, but the top of the tree should now be headed back and lightly thinned out.

Pruning in Relation to Growth

If good cultural practices fail to produce adequate growth, a moderate heading back into 2- or 3-year old wood or a more detailed type of pruning may be necessary. However, reliance should usually be placed on good cultural practices rather than on pruning to obtain adequate growth.

Control of Diseases and Insect Pests

The insecticide schedule must center around control measures for pear psylla.[4] Parathion and related materials have greatly facilitated psylla control. Aphids and leaf hoppers should also be eliminated. Aside from the direct damage they cause, they may also spread fire blight. Dormant DN sprays usually prevent aphid damage, but summer sprays of DDT beginning with petal fall may be necessary for leaf hopper control.

Antibiotic sprays of streptomycin sulfate have given marked results in the control of blossom blight when

[4] Control of pear insects is discussed in detail in Cornell Extension Bulletin 711, *Diseases and Insects in the Orchard*, by W. D. Mills and A. A. LaPlante, 1954.

Figure 8. The result of failure to head back the tops of the trees at an early enough age.

temperatures have been over 65° F. The grower should certainly be prepared to use them if humid weather and high temperatures occur during bloom.

Pear scab is a problem in some orchards. Fungicide applications in pre-blossom and early post-blossom sprays should be made to control this disease.

Hot weather may result in a scorching of pear leaves. Within a period of several days, many of the leaves may turn dark brown. This is most likely to occur in protected areas where air currents are deflected and temperatures are unusually high. Psylla buildup can increase the probability of scorch damage. Sulfur paste can also increase scorch when applied during the summer. Parathion and related materials seem to increase the injury, and their use should be avoided during or just preceding any predicted high temperatures.

Figure 9. The tops of these trees have been kept headed back. The bearing area in the lower part of the trees has been maintained. The trees are spaced 20 x 20. This is the minimum for vigorous older trees on good soil. Trees on only moderately well drained soil will not produce as wide a spread.

Fruit Thinning

Good cultural practices will usually insure adequate pear size. However, if precautions are taken to obtain a set of fruit under adverse weather conditions, an excessive set may occur when unusually good weather prevails. At present, no definite suggestions can be given for chemical methods of thinning. Naphthalacetamide will thin pears, but not enough information is available to suggest times and rates of application.

Hand thinning is not always a practical or profitable operation. If pears are being grown for the fresh fruit trade and an abundant supply of temporary help is available, hand thinning may be commercially feasible. The trees should be thinned as soon after the June drop as possible. Bartlett fruit on a moderately vigorous tree should be thinned to a spacing of about 6 to 8 inches. Always leave the larger and remove the smaller fruit, however.

Table 2. Pressure-test limits for harvesting pear varieties
(Plunger 5/16 inch in diameter; penetration 5/16 inch)

Variety	Pressure test*			Locality
	Passable upper limit	Best upper limit	Lower limit	
	(pounds)	(pounds)	(pounds)	
Anjou		13	11	Generally applicable
Bartlett	23	20	17	Generally applicable
Bosc	15	14	11	Generally applicable
Clairgeau		14	11	Generally applicable
Comice		11.5	9	Generally applicable
Howell		16+	14	Work done in Hudson Valley
Winter Nelis		14	11	Generally applicable

Source: U.S. Department of Agriculture Circular 627, M. H. Haller, **Fruit Pressure Testers and Their practical Applications.** 1941.

* Much of the work upon which these limits are based was done on the West Coast. Where comparative figures are available, however, the work seems to apply to New York conditions. These figures are presented as a guide until detailed local information can be obtained.

Harvesting

Determination of Picking Maturity

Pears are usually picked partially immature, because stone or grit cells may form if they are allowed to ripen on the tree. This practice also produces maximum fruit quality. The following characteristics can be used to determine proper maturity for picking; (1) a slight change in ground color to a lighter shade of green, (2) corking over of lenticels, (3) ease of separation of the stem from the spur, (4) fruit size, (5) fruit firmness, (6) soluble solids. Fruit located on outside and on well-thinned branches may ripen slightly ahead of those on inside or heavily set branches. Under commercial conditions, the fruit is often harvested in only one picking, and the determination of proper maturity must strike at an average. If a large quantity of fruit is located on the inside of the tree, two pickings may be worthwhile.

Although flesh firmness depends in part upon growing conditions, the pressure tester can be used as a rough guide.[5] Picking of Bartlett should not begin until the fruit tests 21 or 22 pounds pressure, and should be completed by the time the pressure tester registers 17 pounds. Fruit that is to be canned immediately might be

[5] Directions for the use of the pressure tester can be obtained by writing to the Pomology Department, College of Agriculture, Cornell University, Ithaca, New York.

harvested at 15-17 pounds. With average weather conditions, there is a decrease of roughly one pound pressure in a 4-day period. Pressure test limits for other varieties are listed in table 2. Expressed Bartlett juice should read no less than 13 percent soluble solids on a refractometer. Pears increase considerably in size and weight when approaching picking maturity and should not be harvested earlier than necessary. While most pear varieties are harvested when the flesh is still firm, many, among them the Bartlett, do bruise easily and are best handled with as much care as dessert varieties of apples.

Storage

Conditions Favorable for Storage

Fruit that is to be stored should be moved immediately after picking to cold storage. This is of special importance with the Bartlett variety, which is usually picked while the weather is still warm. The ripening effects of warm temperatures are as pronounced on most pear varieties as on apples. The best storage temperatures for pears is from 30° to 32° F. The relative humidity should be about 90 per cent where possible.

Ripening

Pears do not continue to ripen in cold storage as do apples. Thus, when the pears are removed from cold storage, they should still appear hard and immature. To complete the ripening process, the fruit should be placed in a temperature of 65° F. with a relative humidity of 85-90 per cent. If a fast rate of ripening is desired, the fruit can be held in a warm (70°-75° F.) water bath for an hour. This warms the pears up fast so that ripening can begin immediately.

Storage Life

The maximum storage life for Bartlett is 6 to 9 weeks and for Bosc 8 to 11 weeks. Fruit that has been kept too long finally loses its capacity to ripen normally when removed from storage. When the fruit has been stored for more than several weeks, a continuous check should be made to determine if it is losing its capacity to ripen. Fruit that is too immature when picked has the greatest tendency toward loss of ripening capacity. Over-mature fruit is subject to storage rot and surface discoloration. Core breakdown may occur, especially after cool growing seasons.

Polyethylene Box Liners Increase Storage Life

Periods of cold storage longer than those possible with standard methods might sometimes prove profitable. Recent studies with 100- and 150-gauge polyethylene box liners may make this possible. The storage life of Bartlett pears in polyethylene box liners can be lengthened 6 to 8 weeks

over the standard pack, Bosc 4 to 6 weeks, and Anjou 6 to 8 weeks.[6]

Certain precautions are necessary in the use of polyethylene liners. As with modified atmosphere storage, only fruit destined for long periods of storage would justify its use. Only sound fruit washed in an effective fungicide should be so packed. The storage temperature should be 31° F. The fruit is best precooled before packing. The film liners should be large enough to fit a standard wooden box with enough lap to close tightly with a twist or hot seal. Within 1 to 3 days of removal from cold to warm storage, the bag should be opened or split to let in air. As with fruit stored in the usual way, the ripening temperature should be 65° F. and the humidity 85 per cent.

At present, the method is suggested only on a trial scale. In some seasons, pears in sealed liners are susceptible to injury from accumulated carbon dioxide.

[6] For further information on this method of storage, see U.S. Department of Agriculture Circular 965, *Use of Film Box Liners to Extend Storage Life of Pears and Apples,* (April 1955).

Figure 10. Bosc produces a larger tree than Bartlett. The tree in the foreground is Bosc, as is every third tree thereafter.

Varieties

To be profitable, a pear variety should be well known by the public and have a wide demand. For this reason, the pear industry of New York is based mainly on the Bartlett. This variety has excellent dessert and processing qualities, but other varieties also have satisfactory fruit and tree characteristics. Bartlett should still be the main variety for most commercial plantings. Other varieties also recommended for commercial production are listed in order of their ripening dates.

Clapp's Favorite. Ripens 2-3 weeks ahead of Bartlett; yellow-blushed, symmetrical, attractive fruit; softens quickly at center but is acceptable for immediate processing and fresh fruit; trees vigorous; very susceptible to blight.

Bartlett. Yellow, generally large fruit; excellent quality for dessert or processing; can be stored about 2 months; the main New York pear variety; tree moderately vigorous; susceptible to blight.

Gorham. Ripens 2-3 weeks after Bartlett; yellow, generally large fruit; excellent quality for dessert or processing; tree vigorous; susceptible to blight.

Buerre Bosc. Ripens 5-6 weeks after Bartlett; bronze, russet, generally large fruit; excellent dessert quality, but because of its long tapering neck it is difficult to process; tree vigorous; very susceptible to blight.

There are many other pear varieties available, both old varieties for special purposes and newer sorts which have not been fully evaluated. For a description of some of these, see Cornell Extension Bulletin 733, *Varieties of Fruit for New York.*

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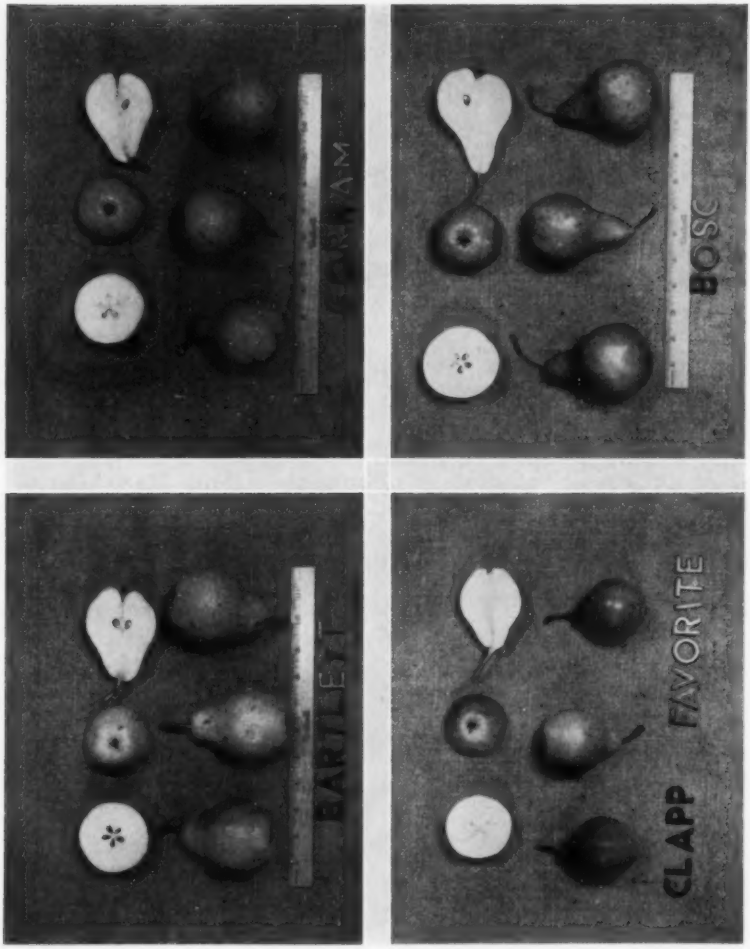

Cooperative Extension Service, New York State College of Agriculture at Cornell University and the U. S. Department of Agriculture cooperating. In furtherance of Acts of Congress May 8, June 30, 1914. M. C. Bond, Director of Extension, Ithaca, New York.

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